

#### ABSTRACT OF THE DISCLOSURE

To provide an X-ray microscopic inspection apparatus capable of performing non-destructive inspection with high resolving power within a very short period, and having advantageous functions such as a high precision electron probe control function, a CT function, an elemental analysis function, and a target switching function. The apparatus includes a magnetic superposition lens having a magnetic field generating portion disposed in the vicinity of an electron generating portion of an electron gun; reflected electron detecting means having a detecting portion disposed above the target for X-ray generation, for detecting a reflected electron from the target; and electron image generating means for performing imaging of a target surface utilizing the signals from the reflected electron detecting means, wherein the apparatus is arranged so that alignment including focus adjustment to the target for X-ray generation and astigmatism correction may be performed based on image information of the electron image. Further, the apparatus is equipped with functions such as the electron probe control function, the CT function, the electron axis alignment function the elemental analysis function, and the target switching function.